Synthesis of Nucleotide Prodrugs as Potential Antiviral Agents

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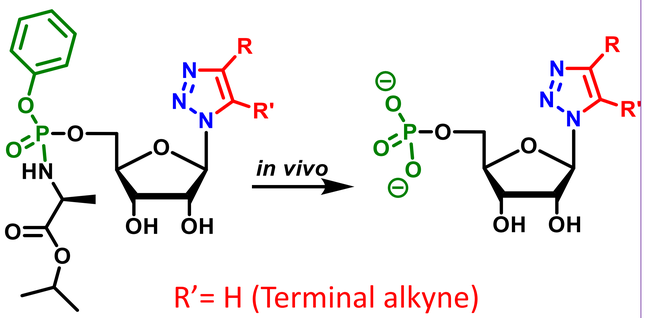
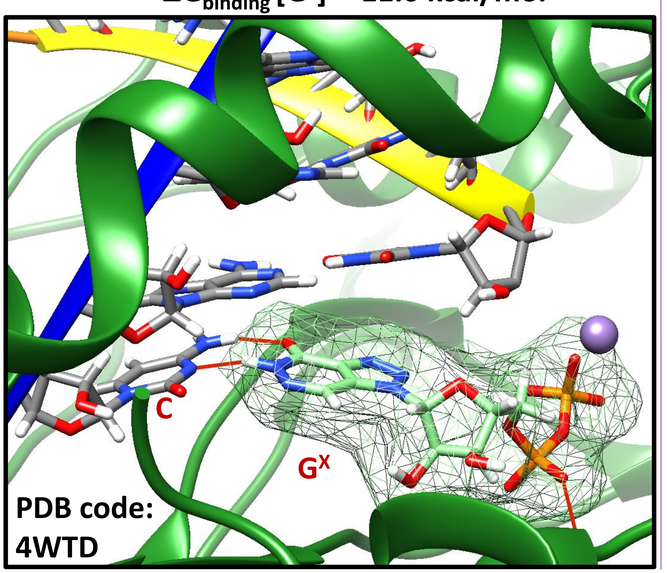
INTRODUCTION

- Nucleotide analogues (NAs) have been used to target the process of transcription in positive-sense viruses (eg. Hep C and SARS-CoV-2).
- The NAs synthesized in this project are an extension of the fleximer design.
- Making our work unique is the addition of the **phosphoramidate** moiety, resulting in a nucleotide prodrugs.



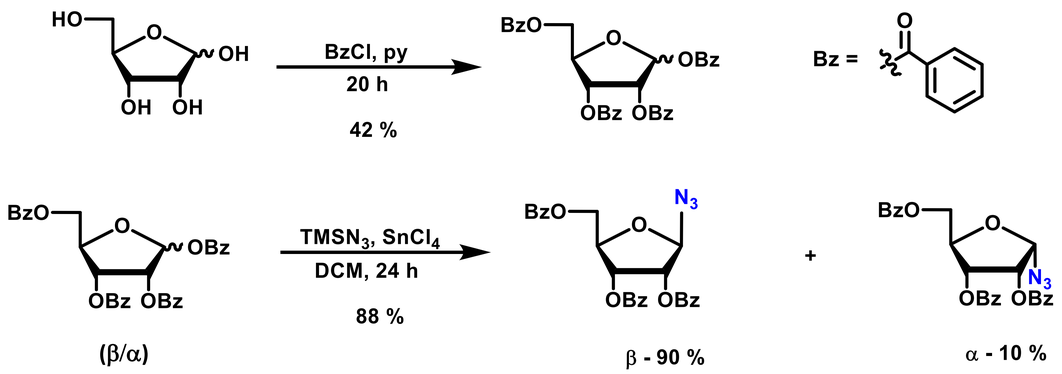
Docking Simulations

$\Delta G_{binding}$ [G^x]= -11.0 kcal/mol

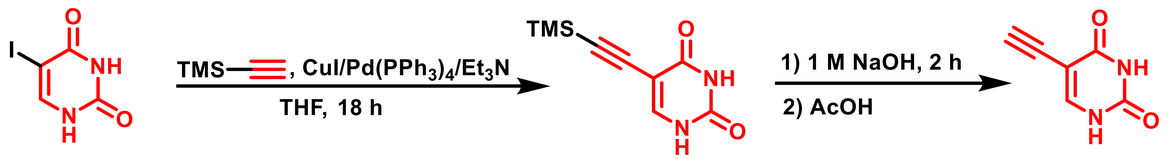


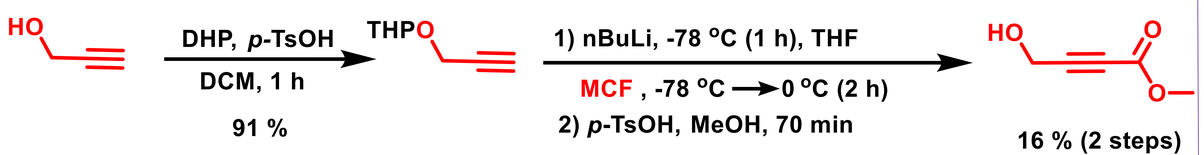
SYNTHESIS

Carbohydrate Synthesis

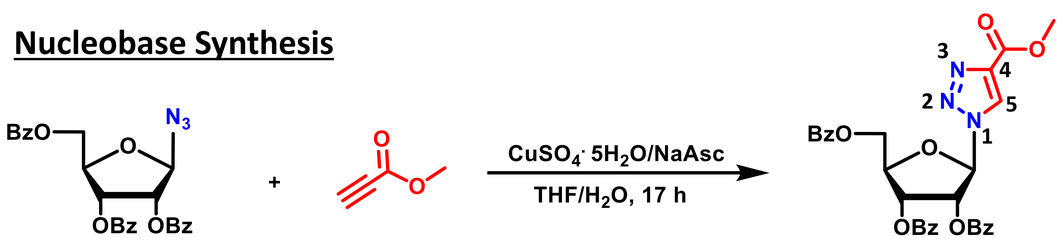


Alkyne Synthesis





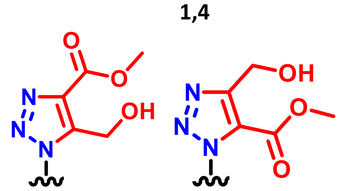
Nucleobase Synthesis



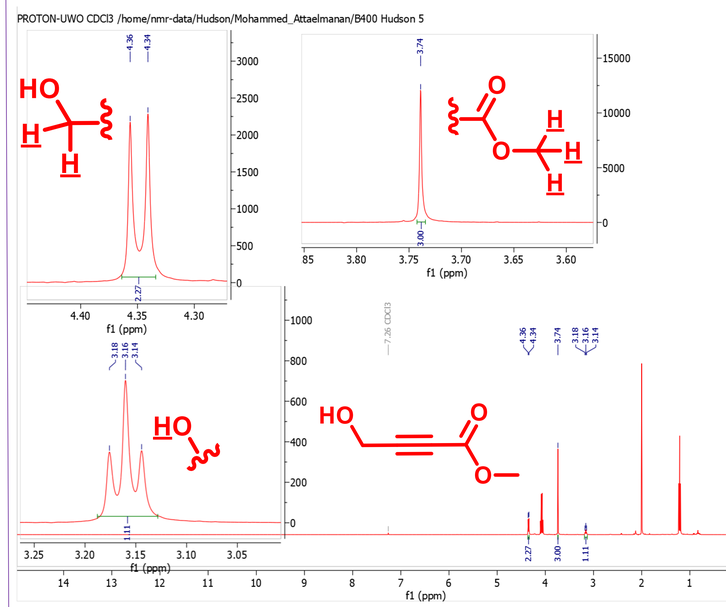
Cu⁺AAC Advantages:

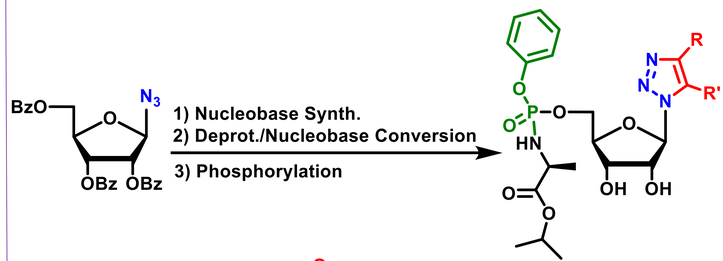
- Requires minimal to no purification
- 1,4 selectivity

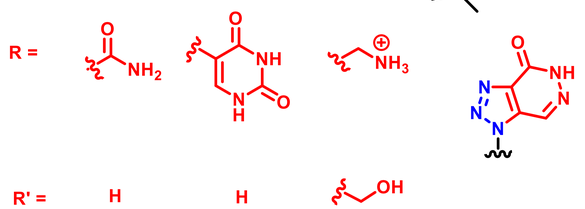
Internal alkynes require Cu-free conditions resulting in a mix of regio-isomers



RESULTS & FUTURE WORK







ACKNOWLEDGMENTS

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